

SIXPENCE

FEBRUARY 1945

AMATEUR RADIOS

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OF
AUSTRALIA



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FROM THE EDITOR'S PEN

Many are the theories and suggestions put forward by Hams as to the possible post-war Amateur activities. Most particular attention has been paid to the question of frequencies.

In a current issue of QST is published a lengthy text of a testimony offered at formal hearings on allocation held by the FCC. Needless to say the testimony was made by officials of the ARRL in the interests of Amateur Radio.

It suggests that the Amateur Bands must be diversified as Amateurs are experimenters and investigators--of roving and divergent and changing interests, and consequently necessitates the allocation of bands to cover all types of emission from telegraphy and telephony to facsimile, television and pulse transmission. Furthermore it is advisable for allocations to be in harmonic relationship so that Amateurs may have at their disposal frequencies suitable for the various types of emission over various distances, independent of diurnal or seasonal conditions.

Frequencies requested below 60 Megacycles are:-

1,750	to	2,050	Kc	21,000	to	22,000	Kc
3,500	to	4,000	Kc	28,000	"	30,000	
7,000	to	7,300		56,000	"	60,000	
14,000	to	14,400					

Above 60 Megacycles the ARRL have requested rather an extensive allocation which are:-

				Alternatively			
112	to	116	Mc	144	to	149	Mc
224	"	230		218	"	225	
448	"	480		420	"	460	
896	"	960		840	"	900	
1,792	"	1,920		1,125	"	1,225	
3,584	"	3,840		2,500	"	2,700	
7,168	"	7,680		5,200	"	5,750	
14,336	"	15,360		10,000	"	10,500	
28,672	"	30,720		21,000	"	22,000	

Rights shared above
this figure.

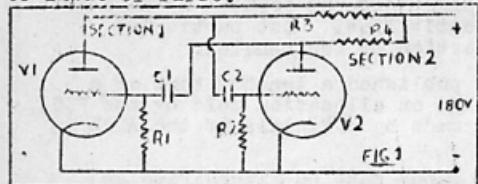
Rights shared above
30,000 Megacycles.

....000....

.. Charles G. Quin...VK3WQ ..

CORROBORATING THE TUBE DATA BOOKS
MULTIVIBRATOR.

Several ways of describing multivibrator action, have been given in various text books, and the following has been selected. "Consider two triode amplifier circuits - resistance, capacity coupled, connected, the output of one, to input of the second, output of this to input of first."



In this circuit, only one tube is conducting at a time, the other being biased beyond cut-off.

For example, if V1 is conducting, the coupling capacitor C2 has a charge such that the grid of V2 is highly negative. This charge leaks off through R2, until the grid

voltage of V2 is high enough that V2 begins to draw plate current.

Now, during the time that C2 is discharging, C1 has been charging through R4, so that when V2 begins to conduct, the grid of V1 is driven highly negative, causing an abrupt transfer of plate current from V1 to V2. The coupling capacitor C1, now begins to discharge through R1, until such time that V1 begins to conduct, and the plate current is transferred from V2 back to V1 again.

Oscillations are then set up, the frequency of which depends principally on the values R1, R2, C1, and C2. If R1 and R2 are equal in value, the C1 and C2 are equal in value, each tube will conduct half the time, and a symmetrical square wave will result. The higher the values of R1, R2, C1 and C2, the lower will be the frequency of oscillation.

The sum of the non-conducting times of V1 and V2 is one period of the multivibrator frequency.

As with all theoretical explanations, errors are found in practical operation. For instance, it has been shown that, through slight differences in tube construction, and slightly incorrect values of circuit constants, the actual wave shape, and frequency of oscillation, will vary from that which is calculated. Of course this is only true when accuracy within a few cycles is required.

An instance given in another text book shows that for tests taken with nine different tubes of various manufacture, in an oscillator designed for these tubes to operate at 1,000 c.p.s., the frequency varied from 1041 to 1211 c.p.s. at a fixed plate voltage of 180 volts to a 6SN7 gt.

Also the actual plate resistance of the tubes used, somewhat lower than that obtained from static characteristics given in tube data books.

To design a multivibrator to operate at a natural frequency of 1000 c.p.s. the output of which must be symmetrical, then R_1 , R_2 , and C_1 , C_2 , must have equal values.

The tube to be used is a 6SN7 GT and plate supply voltage is 180 volts. (A 6SN7 is actually two type 6J5 in the one envelope.) Since it is symmetrical, Time constants of Section 1 and 2 are equal. This is shown as $\frac{1}{T_2}$ = TIME CONSTANT that is, each triode contributes half the total period. Then choose R_3 and R_4 as 20,000 ohms.

To calculate the time during which V_1 is non-conducting, and hence V_2 , we give the following for calculation of C_1 and C_2 .

$$C_2 = \frac{T_2}{5 \left(\frac{R_4 + R_1 \times R_{g1}}{R_1 + R_{g1}} \right)}$$

Where T_2 = Non-conducting time of V_2

R_{g1} = Grid cathode resistance of tube.

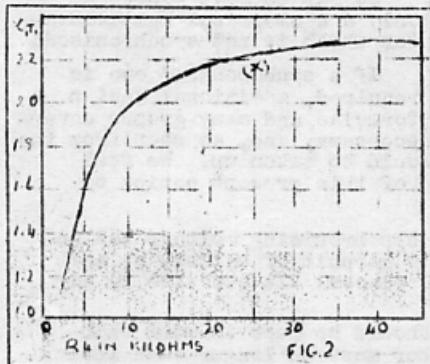
R_1 = Grid resistor V_1 .

R_4 = Plate resistor V_2 .

Then $\frac{1}{T_2} = \frac{2 \times 10^3 \times 5 (20 \times 10^3 + 1.5 \times 10^3)}{20,000}$ this can be worked out to give 0.00465 ufd, and to take the nearest value in practice 0.0005 ufd.

A graph is now given for T , and T_2 - a point is chosen from

here (x) since we are using 20,000 ohms for R_3 and R_4 .



$$\text{Then } \frac{1}{T_2} = \frac{C_2(R_1 + R_{b2} \times R_4)}{R_{b2} + R_4}$$
$$= 2.16$$

Where R_{b2} = D.C. plate resistance of V_2 .

$$\text{Then } R_1 + \frac{R_{b2} \times R_4}{R_{b2} + R_4} = \frac{T_1}{2.16 \times C_2}$$
$$= \frac{2 \times 10^3 \times 2.16 \times 5 \times 10^{-10}}{4.63 \times 10^5}$$

The value of R_{b2} for $R_4 = 20,000$ ohms is read from the average p.c. plate resistance curve as 8.4×10^3 ohms, see Figure 3.

$$\text{Therefore } R_1 = 463 \times 10^3 - 6 \times 10^3 = 457,000 \text{ ohms.}$$

If it is desired to adjust the frequency accurately to 1,000 cps a .25 resistor in series with a .5 potentiometer can be used at each R_1 and R_2 . This will permit adjusting for symmetrical wave

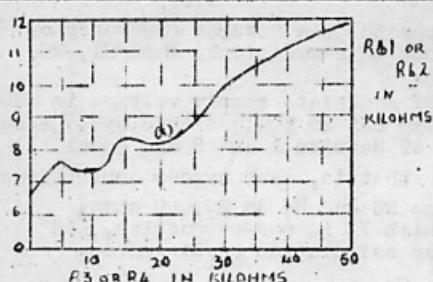


FIG 3

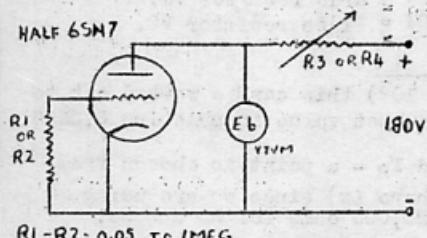


FIG 4

ing phase difference etc., would be necessary, and, as seen from the foregoing, quite an amount of space would be taken up. We feel therefore that it is beyond the scope of this present series to embark on such an undertaking.

Suffice it to say then, that this synchronising voltage can be applied in the grid, plate, or cathode circuit of either, or both tubes, or in any combination of these places. It can also be any multiple of the natural frequency.

When considering this aspect, it should be kept in mind that the natural period of the multivibrator must be longer than its controlled period. If such is the case, then some variation of the circuit constants, and tube characteristics is allowable. A synchronising voltage of negative polarity is used which then prevents the tube from conducting at the time determined by the natural period of the circuit. The multivibrator is not permitted to trip until the end of the synchronising pulse.

It is possible to employ a natural period which is shorter than the desired controlled period. In this case a synchronising voltage

shape and correct frequency for different tubes.

Note that in this last example, R_b is practically independant of R_l for values of R_l in the range given,

$$R_b = \frac{E_b}{I_b}$$

where E_b = plate voltage.
 I_b = plate current.

In all calculations, plate supply voltage must be assumed to be correctly held at 180 volts in practice, or the frequency will change.

For example, if the resultant frequency is 998 cps at 180 volts it could be 1022 cps for 150 volts, or on the other hand 985 cps at 210 volts, so naturally a stabilised supply is essential where maintenance of frequency is desired.

So far we have discussed only a symmetrical multivibrator which is not synchronised.

If a synchronised one is required, additional design formulae and many graphs covering

of suitable polarity (positive as referred to the grid of the tube to be synchronised) and of sufficient time duration, must be supplied to the circuit to prevent the multivibrator tripping at the time determined by its natural frequency, and the multivibrator trips on the front edge of the synchronising pulse.

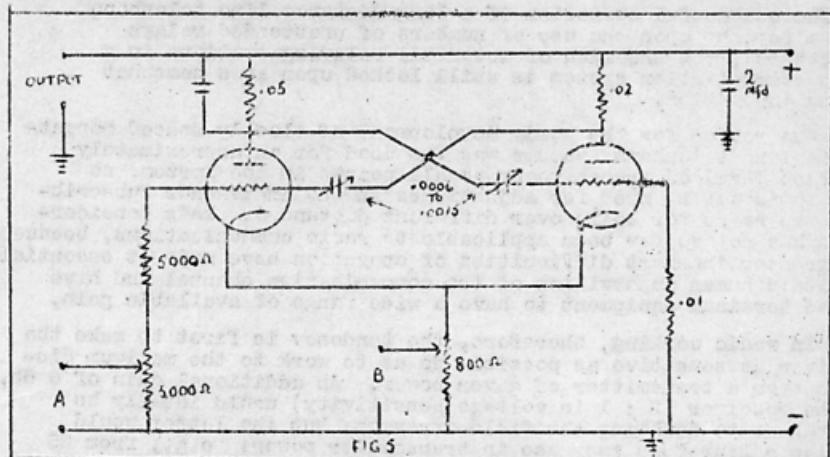


FIG 5

With synchronising applied at A, the vibrator will work equally well on odd or even harmonics.

If plate resistors are made to each be 30,000 ohms and synchronising voltage applied at B, preference will be shown by the vibrator to even harmonics.

Here the natural period of the multivibrator is 10 K/cs and assuming the applied synchronising frequency is 100 K/cs, the controlled period would represent 10 K/c intervals throughout the operating range, with a precision equal to that of the 100 k/c signal.

By varying A (5000 ohm potentiometer) a point will be found where an odd harmonic, that is, 8 or 10 beats, will be heard between two 100 K/c marker points on a receiver dial. This will indicate 11 and 9 K/c separation, whilst another point will be found where 9 beats occur, that is, 10 K/c separation.

If it is intended to design and operate a synchronised multivibrator you are referred to the bibliography at the end of this series before any ground work is done.

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AUTOMATIC RADIO RELAYING

The successful operation of a long-distance line telephone system depends upon the use of numbers of unattended relays (repeaters), yet the idea of automatic relaying stations in a radio communication system is still looked upon as a somewhat daring innovation.

One reason for the early development of closely spaced repeaters on line telephone systems was the need for an approximately constant level of speech power at all points in the system, so that there was no need for adjustments in the individual subscriber's apparatus for calls over different distances. This consideration has not so far been applicable to radio communications, because the greater inherent difficulties of operation have made it essential to retain human supervision of the communication channel and have caused terminal equipment to have a wide range of available gain.

In radio working, therefore, the tendency is first to make the receiver as sensitive as possible so as to work to the maximum distance from a transmitter of given power. An additional gain of 6 db. in the receiver (2 : 1 in voltage sensitivity) would ideally be equivalent to doubling the field-strength; but the latter would involve a four-fold increase in transmitter power; e.g., from 25 kw to 100 kw, which would be far more costly than increasing receiver sensitivity.

But a limit to useful receiver sensitivity is reached when it can handle a signal which is right down to the noise level; this level is set by different factors at different radio frequencies. Atmospherics and interference from electrical machinery are dominant at the lower frequencies and the inherent noise level of the receiver at the high radio frequencies. Here we have a fundamental problem of communication systems, which in line working is solved by the use of repeaters but in radio working has usually been solved only by an increase of transmitter power and directivity. The difference in tactics arises from a fundamental difference between the two systems; in a loss-free telephone wire the signal strength would not decrease with distance, but a radio signal in loss-free space would still show a decrease of amplitude with distance due to the spreading of the energy over a greater volume as the radius from transmitter to wave-front increases. If one installed a relay station with non-directional aerial half-way between a transmitter and receiver, most of the energy from the relay station would not go in the direction of the receiver, but in all other directions, including back to the transmitter. Of course one would use "beam" aerials if the wavelength were short enough, but there would still be a considerable spread of energy. On world-wide short-wave systems, another problem is to know where to put

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the relay station, since the signal may go one way or the other round the world according to which side is in darkness.

Since it has become possible to build high-power transmitters which would normally send signals to the far side of the world, there has not been much encouragement to build a chain of several stations, each of fairly high power, to do the same job; the occasions when long-distance communication was prevented by specially unfavourable propagation conditions were regarded as unavoidable natural events. Continued study of the ionosphere has brought a much greater understanding of such phenomena, and a more hopeful attitude.

An entirely different set of conditions holds when we come to decimetre and centimetre wave-lengths. In the first place, their propagation is approximately optical, so that communication appreciably beyond the horizon (as seen from the top of the transmitting aerial) can only be secured by the use of relay systems; and the expense of increasing the range of a station on such wave-lengths is not that of increasing the power but of increasing the height of the aerial mast or tower. Secondly, the directivity of aerials is so much greater that the system can be made to behave as a series of well-defined channels between transmitters and receivers, almost like a wire communication system. Finally, the amount of fading experienced is small (provided there are no large objects moving in the vicinity), so that there is little need for variations in receiver gain; this also resembles land-line conditions.

One of the difficulties of all radio relaying systems is to prevent feed-back between transmitter and receiver at the relay station, since this would cause oscillation. On the longer wave-lengths the only solution is to use separate frequencies for transmission and reception, i.e., the signal changes its carrier frequency in passing through the relay station. For VHF working it has been suggested that the feed-back between transmitting and receiving aerials could be neutralised, but usually a change of frequency will be the safer plan.

There is therefore a good case for long-distance VHF communication systems based on highly directional aerials and automatic relaying stations at appropriate intervals. It is certainly a branch of radio which, in its various applications, should have an important future.

From an article in "Wireless World."

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CRYSTAL PICKUPS

The use of Rochelle salts as a piezo-electric unit is handicapped by the fact that the crystal tends to absorb or lose water under varying climatic conditions. At a temperature of 20 degrees Centigrade its water of crystallization is in equilibrium in air, having a relative humidity of 40 per cent. If the air is drier, the crystal tends to lose water and vice versa. In both cases its operation is adversely affected.

It is not easy to mount the crystal in an hermetically closed casing and at the same time, transmit the vibrations of the needle through the sealing. On the other hand, the use of a rigid damp-proof coating such as wax is found to cause excessive damping of the unit.

Such objections, do not however, apply to the use of certain semi-fluid mediums. Preferably the crystal is mounted in a casing filled with lanolin, which emulsifies any moisture that may percolate inside it, and by enclosing each globule in a coating of fat prevents the water from making intimate contact with the crystal.

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THE TECHNICAL LIBRARY

RADIO RECEIVERS AND TRANSMITTERS ... S. W. Amos & F. W. Kellaway..
(Lond. 1944) 281 pages 35/-.

The authors of this book point out in the introduction that they have endeavoured to produce a text book which will bridge the

gap between practical radio and the corresponding mathematical angle. They have therefore assumed that the reader has already acquired a good knowledge of radio practice (at about AOCF standard by the way) and a working knowledge of Algebra, Trigonometry and Calculus. This book shows how the two pie up.

The contents are set out under the following headings:- Introduction (a broad outline of the scope of the book) Inductance, Capacitance, Resonant Circuits, Propagation of Radio, Waves and Aerials for Transmission and Reception; Valves, AF Amplification and Detection. The Output Stage; The Loudspeaker, and Negative Feedback; RF Amplification, Straight Receivers and IF Amplification; Oscillators, Superhet. Receivers for AM, EM and Television; Transmitters for Telegraphy AM and FM Broadcasts and Television.

The following Appendices are also given to assist in understanding the Maths; Simple Harmonic Motion, Fourier Analysis, Work done during Hysteresis Cyclo, Analysis of tone control circuits; Note on Dimensions, and solutions to three common differential equations. There are plenty of diagrams throughout the book, also eight photo plates.

This is a worthwhile addition to the library of the Ham who has a reasonable mathematical knowledge and would like to know how to apply it to radio.

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THEORY AND DESIGN OF VALVE OSCILLATORS....H.A. Thomas..(Lond. 1944)
270 pages 35/-

For the oscillator specialist, this one, covering as it does the operation, characteristics and design of just about every known type of valve oscillator.

Contents are set out as follows:- Fundamental principles of Self Oscillation in valve maintained systems. Types of Oscillators and Conditions for maintaining oscillations, Amplitude and Wave Form of Oscillatory current and Efficiency of Oscillations, Frequency of Oscillation and its Dependence on the Maintaining System; Frequency Drift of Oscillators, Frequency Changes due to effects of Temperature on Inductance Coils, Ditto on Condensers, Frequency Stabilisation of Maintaining System, The Stabilisation of Inductance Ditto Capacitance, Frequency Stabilisation by Automatic Monitoring.

Despite Mr. Thomas' long windedness in the choice of Chapter headings he really does a fine job on the text. This a book which has been very thoroughly thought out and written, and if you are really interested in oscillators is well worth having.

All books reviewed in this page are by courtesy Mc.Gills, Melbourne.

SLOUCH HATS and FORAGE CAPS.

There is nothing like a bit of "fellow feeling"....I had an Air Letter from Jack Clarricoats G6CL and he says "Khaki & Blue" is "getting hard to fill"...so Our Column isn't the only one that has worries...Wingeing, Jack, om, is the remedy they tell me, but, om, believe me...lay it on pretty thick. Hi!

The New Guinea Radio Club held its second Meeting just before Christmas. 30J, 4FW, SWJ, 2ALD and sec Op of 2MZ, plus S/Sgt Murphy Watson, Dick Bridgman, Sgt Allen Reid, Sign. Bob Sutherland, J. Donne, R. Callow, J. Rojers...and a bloke named Clark...Syd, or Petty Officer Telegraphist, or better still Hon. Sec. of above. 2ALD gave the lecture and all enjoyed themselves...as Syd put it... "the meeting closed at ten to seven...and the talk went on for hours!!!!" Syd is still trying to contact 7HL, 7AL, 3BC, 5YQ known to be in the area...but now they have free time on WVTH so the N.G.R.C. is there to stay. An offer of help and congratulation was received from the Vic. Division of the WIA. The next meeting of the Club was to be held on Xmas Eve...but perhaps they won't be able to even write the minutes on a date such as that. Hi!

I sometimes think our circulation is "whatever it is multiplied, but a number over three" as our Mag. and Your column gets around and is read by many others besides the chappie who receives it in his mail. This time the thought is prompted by a letter 3NY has received from Sgt. G. M. Hull, 3ZS Group 838 R.A.A.F. Pacific. It says... "Yed my wonder at my sudden awakening? Well, I have W/O Johnson (VK3YF) right in the same tent with me here and he received two issues of Amateur Radio two days ago which I read from back to front with very great interest indeed. He wishes to be remembered to any of the VK's down there who know him.

One morning recently we had quite a meeting of the boys for morning tea...er correction there, it was coffee. Gordon Williamson from Rainbow 3GW popped in unannounced and was right welcome. It goes without saying that the three of us took the conversation round to post-war "Hamdom." Len Johnson and I also ran into Dick Giddings 3DG back at Noemfoor Island a few months ago. As a matter of fact I have run into quite a number of the boys in my travels through the pacific War area, sometimes having gone into signal units in the hope of meeting some of the boys I know back south.

During my first twelve months in the tropics I as op., on an RAAF motor auxiliary vessel which, as well as being highly interesting and exciting at times, served to keep the old fist in practice. I was originally an air operator, though saw no action in that category. Always on the lookout for American W's I once found W7FTF tucked away in his FB radio shack aboard a Liberty Ship. Boy, they sure have beautiful equipment...enough to make any ham's mouth water with envy."...if I put all his interesting letter in the two pages would be full...thanks om (ZYC).

Sgt. H.D. Ackling better known as Dx hound 2PX was in Sydney over Xmas and sends seasons greeting to all his old friends. His QRA is

Aust., Spec. Wireless Group...Australia (Hi)...Better contact some of those Hams in your area, om.

Sgt. Clarry Castles 5KL somewhere north of Capricorn is getting near the time where one counts the days to when ones leave South "should" be due...plans to spend a few days in Sydney this time. Hopes to meet all the gang again, and got some of the dust out of his throat...Have to water hero, Clarrie...still you never know, Hi!

An air letter from W/O Manwaring A.L. once VK2AJK gives his service address S6D of Sigs ATBHQ Melbourne...and says he is on a "romantic coral island" though how rain and mud and war can be "romantic" is quite beyond 2AJK's comprehension...however, as he is always on the move he has hopes of a less primitive QRA "next time." Hi! Sends his 73s to all the gang.

Did you know LTO Reg Morgan 2ABM has already ridden Hitler to Berlin...the former was a horse and the latter a town in S.W. Africa ...now don't blame ME... (2YC).

Major Don B. Knock 2NC sends quite a bit of dope..."Sqdn/Ldr. Arthur Walz is now at Townsville, in charge of quite a big area and a big job of work. Since he took over his new unit Arthur has run into the following Hams. At 4QN National Station 4RB and 4FE...our old friend 4RF in the Navy and in the RAAF where all the Hams seem to be...4KO, 2LZ, 9XX/2XX, 6FH, 3BV, 5UL, 5GS, 2LD, 2TQ, 2AFG, 6KN, 3UC, 3RD, 3YN/GYN, 4VT/2AIT, 3WM, 3VN, 52X, 30L, and C26A...whatever that last means... (2YC).

As Arthur says this is not a bad score...but as Don adds 4AW is a dyed in the wool Ham. It wouldn't matter if he were a Marshal of the Air Force, he would be quizzing round to see what Hams he could dig out...yes, Don, I too reckon this is the diff. between the real Brotherhood of the Ham ...and the "other thing"...2YC. Hope you enjoy your leave Don, om. and thanks for the notes.

The old 2LZee dropped into 2YC's the other morning and for once I managed to get a bit of quiet to talk to him in...his last two visits were a fiasco. He looks pretty fit and seems to think what Don says of Arthur fits, fb. Con is thinking of trying to make an astronomical telescope to see how the stars look.

A note from our Canberra Correspondent says I'd better fag up FM... (he thinks I know everything else, apparently, Hi, 2YC) and says that 5GL Clem Tilbrook a Flight Loot in the R.A.A.F. has now set up shop at HQ in VIM, after spending some time in Townsville.

Many thanks om's for the Xmas Cards, etc., which were like 3RJ's watch - a bolt from the blue...I've answered the first one. (Hi!) and will catch up on the others. Besides we have made a good start for 1945 so I hope it will keep up, and all those "free readers" (hi!) of Amateur Radio will be able to find out just where their most frequently worked VK has wandered to. I'm sure you all know by now that the address is 78 Maloney St., Eastlakes and the 'phono number MU1092.

DIVISIONAL NOTES

.. Federal Headquarters ..

During the past years it is quite safe to say that the most discussed subject wherever Amateurs have met has been, "I wonder what the frequencies will be after the war?" Over the past months members of the A.R.R.L. together with other representatives of organisations dealing with all aspects of Radio have been discussing this all important question with the F.C.C. in Washington.

As a result of these deliberations the F.C.C. will recommend at the next International Communications Conference the allocation of the following frequencies for Amateur use:-

3500-3900	kcs.	218-225	mcs
7000-7400	"	420-460	"
14000-14400	"	1125-1225	"
21000-22000	"	2500-2700	"
28000-30000	"	5200-5750	"
144-149	mcs	10000-10500	"

From the above it will be seen that the 160 metre and 56 mc bands have disappeared whilst a new band 21-22 mc band has appeared. It is quite safe to say that there will be few regrets at the loss of 160. The only use it was ever used to the writers knowledge was during the All Band Contest and in later years, at the request of the VK4 Division, a 160 Metre Band Contest was staged in an endeavor to stimulate interest. Even this failed to attract very many entrants.

The loss of the 56 mc band will be deplored by quite a number of enthusiasts, but with Television and Frequency Modulation looming large on the commercial horizon, 5 metres seemed doomed almost prior to the outbreak of war.

The new band 21-22 mcs offers distinct possibilities and should compensate for the loss of the other bands. The suggested allocation of 7000-7400 kcs leads one to the belief that this band will be strongly sought after by commercial interests at the International Convention and in asking for a lot it is anticipated that at least something will be obtained.

At this stage it must not be taken for granted that the above recommendations will be granted as set out above. They have to go before the International Convention, but as this post war convention will be made up - more or less - of representatives of the United Nations and they will be sponsored by America - there is every reason to regard them in an optimistic light. One thing stands clear. There will be Amateur Radio after the war!

NEW SOUTH WALES DIVISION

The Christmas Meeting of the Division took the form of a Picture and Pound Night in aid of British Centre and was very well attended.

The Chairman in declaring the Meeting open extended a welcome to the large number of visitors present and welcomed home L.R.O. Reg Morgan VK2ABM who had just returned from three years service with the Navy. The movies were provided by Mr. M. Lusby VK2WN, B. Sc.B.E. who had just returned after several years abroad helping to destroy German Bombers before they knew it! Catering was in the hands of Mr. Russ Miller and to say that it was carried out in Russ' usual inimitable manner speaks volumes. Thanks a lot Russ. The success of the evening was due entirely to you and Morrie.

The sum of £3-3-0 was realised and this amount together with a subscription of £2/2/- from Institute making a total of £5/5/- was handed over to British Centre.

The 35th Annual General Meeting of the Division was held at Y.M.C.A. Buildings on Thursday 18th January. In moving the adoption of the Annual Report the Chairman said that he felt that any organisation affected by the war in the manner that the Institute was, could be more than proud of the splendid record of activity of the past year.

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BUSHFIRES RADIO NETWORK

Call signs have now been allotted to the two towns at present participating and they are as follows:-

Dubbo VL2EA, EB, EC and ED
Young VL2EE, EF, EG and EH

It is unfortunate that the non-delivery of crystals is holding up the operation of these stations. Sets have been completed but cannot be air tested through the lack of frequency control.

Unfortunately Wagga will not be participating for some time. The local Council felt that due to the present state of the Country, Wagga and District was burnt out last year and with the drought there is now very little to burn, there is no need for Radio. How many times in the past has such short sighted policy brought disaster to a community. Bad luck chaps, but never say die! Your turn will come.

WIRELESS INSTITUTE OF AUSTRALIA

- New South Wales Division -

Statement of Income and Expenditure for the year ending 31st. December 1944.

	<u>INCOME</u>	<u>EXPENDITURE</u>
To Balance 31/12/43	£3 4 4	£6 10 .
Subscriptions	105 13 .	7 15 .
Book Sales	3 3 .	20 18 11
Exchange	2 .	"Amateur Radio" 40 8 6
Refund N.E.S. Expenses	9 12 6	Donations-British Centre 5 5 .
Advance Bushfires Scheme	10 .	A.C.F. 2 12 .
Donations A.C.F.	3 3 6	Prizes - Essay Competition 2 8 .
" British Centre	3 3 .	Box 1734 1 1 .
		War Savings Certificates 16 . .
		Bank Fees 1 7 6
		Sundry Expenses 4 12 8
		Expenditure N.E.S. 9 12 6
		Q.S.T. 3 16 .
		Bank Balance 31/12/44 15 15 3
	<u>£138 1 4</u>	<u>£138 1 4</u>

BALANCE SHEET as at 31/12/44

<u>LIABILITIES</u>	<u>ASSETS</u>
M. Moore (Bushfires Advance) 10 . .	BANK OF NEW SOUTH WALES £15 15 3
ACCUMULATION ACCOUNT 21 15 3	WAR SAVINGS CERTIFICATES 16 . .
<u>£31 15 3</u>	<u>£31 15 3</u>

Having audited the Books and Vouchers of the Wireless Institute of Australia (N.S.W Division), I hereby certify that the above Balance Sheet is in accordance therewith.
 N. Brooks, F.C.A. (AUST).

EMERGENCY COMMUNICATION NETWORK

From the Press you will have doubtless noted that National Emergency Services have been under review by the Defence Committee. No little consideration has been given to the question of Civil Defence and in view of the improved war situation it was quite logical to expect that some curtailment would take place.

The main features of the decisions reached were:- "A post war Civil Defence organisation is to be maintained in Australia. The requirements in this direction are at present being examined.

While a reserve basis is now to be adopted, the arrangements made are to provide for remobilisation (with refresher training) within one month, and for the maintenance of volunteer training staffs for this purpose."

Upon receipt of this information the Department of National Emergency Services was contacted and a conference held to determine the position of the Emergency Communication Network. After hearing the views of the Department the following scheme was suggested and agreed to.

Network Stations would practice once a month only, and these exercises would take place on the first Friday in each month. District Ambulance Controls would not function, and it will be necessary for the operators to originate their own messages. Only

08 Messages would be transmitted. Exercises will commence at 8 p.m. and eight messages will be handled by each station, viz., four inwards and four outwards. Central will act as Controlling Station, that is to say, you will be asked if you have any traffic. Signal reports will be exchanged between 7.45 p.m. and 7.55 p.m. and you may use Radio to inform Control that your station is manned. It may be difficult to use a telephone due to the D.A.C. not being in operation.

It is anticipated that ships attached to the Sydney Harbor Patrol will be participating with Network Stations in these Exercises, and it is confidently expected that a high standard of operating will be the order of the day, hence every E.C.N. operator should be on his toes.

Remember it is essential that each Network Station be manned not later than 7.55 pm. You will realise that with the probability of nine stations being in operation, any delay at the start will cause complications.

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VICTORIAN DIVISION

Victorian Members and Hams throughout the Commonwealth will be pleased to hear that the Victorian Division has at last been successful, in conjunction with the Forests Commission, of establishing the start of what is hoped to be a really worth while Radio

Emergency Network. Although the news has not yet been conveyed in writing, it is known on good authority that the P.M.G. have issued licences for a base transmitter, and a mobile outfit to be located at Heywood. The call signs respectively are VL3DY and VL5DZ.

At present the Hams responsible for the gear are George Wells VK3EW and Mort Riley VK3TN, but it is hoped that their ranks will be augmented as time goes on. Unfortunately at the moment other districts have not yet been finalised and Hams concerned should not despair, as the information they supplied is being carefully considered, it is hoped that eventually a chain of stations operated by Hams will spring into being.

According to ye Editor's calculations, many city members will or should receive this magazine sometimo on Tuesday next, and providing they read these notes on that day, they will discover that, if they are not already aware, there is a meeting tonight, February 6th. Harry Kinnear VK3KN has promised to bring along his sound projector and put on a show, this you should know from previous publicity, so come along and show your appreciation.

It is hoped that at this meeting a visitor in the person of VU2EB will be present. VU2EB is a member of the English Army who is at present stationed in Melbourne.

At the January Council meeting a letter was received from the New South Wales Division, which stated that as Federal Headquarters has been in that Division for some years, and as the time was rapidly approaching when it would be necessary for FHQ to be in the State in which the Central Administration of the PMG Department was situated and in consequence would the Victorian Division be prepared to assume office immediately.

In order that FHQ should continue to function without a break during the transfer Council appointed Federal Executive at that meeting. Federal President is Mr. R. Marriott VK5SI; Secretary Mr. A. H. Clyne VK3VX; Treasurer, Mr. T. D. Hogan VK3HX and Messrs. A.R. Williams VK3WE and C. C. Quin VK3WQ Councillors.

The Laboratory Committee are proving to be a very live body of this Division, and report that in response to the recent request for back issues of "QST and Amateur Radio" they wish to acknowledge with thanks an offer by VK3ON, perhaps better known to many Hams as 7CH, who has generously offered several copies of QST. A revised list of copies still wanted will be published at a later date, but in the meanwhile they would still appreciate any further offers. The promised list of "Radio" and "Wireless World" needed to complete the files is also held over as several copies have been returned necessitating a revision of the list. (The remainder of their report will also have to be held over...Ed.)

In conclusion just a reminder of the March Meeting which will be held as usual at the Rooms on Tuesday March 6th at 8 p.m.

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THE WIRELESS INSTITUTE OF AUSTRALIA



Divisions of the Wireless Institute of Australia exist in every State of the Commonwealth. The activities of these Divisions are co-ordinated by Federal Headquarters Division, the location of which is determined from time to time by ballot.

Present location of F.H.Q. :— New South Wales

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Vice-President : H. F. PETERSON, VK2HP. Federal Secretary : W. G. RYAN, VK2TI.

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Official Organ : "AMATEUR RADIO"—Published by the Victorian Division.

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Visiting Overseas and Interstate Amateurs are welcome
at meetings and they are invited to communicate with
the Membership Secretaries :

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The N.S.W. Division meets on the third Thursday of each month at Y.M.C.A. Buildings, Pitt St., Sydney and an invitation is accorded to all Amateurs to attend. Overseas and Interstate Amateurs who are unable to attend are asked to phone the Secretary at FX3305.

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